

Application Serial No. Unassigned
Preliminary Amendment dated October 5, 2004
Not responsive to Office Action

Claim Amendments:

The following claim listing replaces all prior versions and listings of claims in the Application:

Claim listing:

Claims 1-7 (Cancelled).

1 Claim 8 (New) A method for desorption and recovery of desorbed compounds from
2 a material, comprising:
3 generating a recirculation stream of inert gas, which passes through the
4 material to be desorbed;
5 heating the recirculation stream of inert gas to a temperature sufficient to
6 cause a desorption process;
7 yielding a gas effluent from the recirculation stream of inert gas in such a
8 manner that the recirculation stream of inert gas maintains constant pressure;
9 delivering the gas effluent to cooling means adapted for cooling the gas
10 effluent;
11 cooling the gas effluent to cause condensation of the desorbed compounds
12 contained in the gas effluent, said cooling being obtained at least partly by pressure
13 vaporization of a cryogenic fluid; and
14 feeding the vaporized cryogenic fluid into the recirculation stream of inert gas;
15 wherein the cryogenic fluid is liquid nitrogen.

1 Claim 9 (New) The method of claim 8, wherein the gas effluent is from the
2 recirculation stream of inert gas with a flow rate that is below 1/50 of a flow rate of
3 the recirculation stream of inert gas.

1 Claim 10 (New) The method of claim 8, wherein said cooling of the gas effluent is
2 performed by way of a cryogenic condenser.

1 Claim 11 (New) The method of claim 9, wherein said cooling of the gas effluent is
2 performed by way of a cryogenic condenser.

1 Claim 12 (New) The method of claim 8, wherein said cooling of the gas effluent is
2 performed by way of an internal fractionation column.

1 Claim 13 (New) The method of claim 9, wherein said cooling of the gas effluent is
2 performed by way of an internal fractionation column.

1 Claim 14 (New) The method of claim 8, further comprising:
2 stopping feeding of the vaporized cryogenic fluid, which is used to cool at
3 least a part of the gas effluent, into the recirculation stream of inert gas;
4 stopping the circulation of the recirculation stream of inert gas;
5 sucking in the recirculation stream of inert gas to generate a negative
6 pressure in a bed of the material to be desorbed and regenerated; and
7 delivering sucked gas to the cooling means.

1 Claim 15 (New) The method of claim 14, wherein said cooling of the gas effluent is
2 performed by way of a cryogenic condenser.

1 Claim 16 (New) The method of claim 14, wherein said cooling of the gas effluent is
2 performed by way of an internal fractionation column.

1 Claim 17 (New) A method for desorption and recovery of desorbed compounds from
2 a material, comprising:

3 generating a recirculation stream of inert gas which passes through the
4 material to be desorbed;

5 heating the recirculation stream of inert gas to a temperature sufficient to
6 cause a desorption process;

7 yielding a gas effluent from the recirculation stream of inert gas in such a
8 manner that the recirculation stream of inert gas maintains constant pressure;

9 delivering the gas effluent to cooling means adapted for cooling the gas
10 effluent;

11 cooling the gas effluent to cause condensation of the desorbed compounds
12 contained in the gas effluent, said cooling being obtained at least partly by pressure
13 vaporization of a cryogenic fluid;

14 feeding the vaporized cryogenic fluid into the recirculation stream of inert gas,
15 the cryogenic fluid being liquid nitrogen;

16 stopping feeding of the vaporized cryogenic fluid, which is used to cool at
17 least a part of the gas effluent, into the recirculation stream of inert gas;

18 stopping circulation of the recirculation stream of inert gas;

19 sucking in the recirculation stream of inert gas to generate a negative
20 pressure in a bed of the material to be desorbed and regenerated; and

21 delivering sucked gas to the cooling means.

1 Claim 18 (New) The method of claim 17, wherein said cooling of the gas effluent is
2 performed by way of a cryogenic condenser.

1 Claim 19 (New) The method of claim 17, wherein said cooling of the gas effluent is
2 performed by way of an internal fractionation column.

1 Claim 20 (New) A system for carrying out the method of claim 8, comprising:
2 a closed loop including a vessel that contains a bed of adsorbent material;
3 gas generating means for generating a recirculation stream of inert gas in
4 said closed loop with said vessel;
5 heating means for heating the recirculation stream of inert gas in said closed
6 loop;
7 a cryogenic condenser, which is at least partly circulated and cooled by a
8 cryogenic fluid that is pressure vaporized;
9 a duct for connecting said closed loop to said cryogenic condenser to feed a
10 gas effluent coming from said closed loop to said cryogenic condenser; and
11 feeding means for feeding a part of the vaporized cryogenic fluid from said
12 cryogenic condenser to said closed loop, the cryogenic fluid being liquid nitrogen.

1 Claim 21 (New) The system of claim 20, further comprising:
2 cutoff means for stopping feed of vaporized cryogenic fluid to said closed
3 loop; and
4 suction means for sucking in the recirculation stream of inert gas in said
5 closed loop to generate a negative pressure in said vessel.

1 Claim 22 (New) A system for carrying out the method of claim 8, comprising:
2 a closed loop including a vessel that contains a bed of adsorbent material;
3 gas generating means for generating a recirculation stream of inert gas in
4 said closed loop with said vessel;
5 heating means for heating the recirculation stream of inert gas in said closed
6 loop;
7 an internal reflux fractionation column, which is at least partially cooled by a
8 cryogenic fluid that is pressure vaporized;
9 a duct for connecting said closed loop to said internal reflux fractionation
10 column to feed a gas effluent coming from said closed loop to said internal reflux
11 fractionation column ; and
12 feeding means for feeding a part of the vaporized cryogenic fluid from said
13 internal reflux fractionation column to said closed loop, the cryogenic fluid being
14 liquid nitrogen.

1 Claim 23 (New) The system of claim 22, further comprising:
2 cutoff means for stopping feed of vaporized cryogenic fluid to said closed
3 loop; and
4 suction means for sucking in the recirculation stream of inert gas in said
5 closed loop to generate a negative pressure in said vessel.